



NAVY TRAINING SYSTEM PLAN

FOR THE

SHORE-BASED AIRCRAFT

LAUNCH AND RECOVERY EQUIPMENT

N78-NTSP-A-50-0110/P

SEPTEMBER 2002

**SHORE-BASED AIRCRAFT
LAUNCH AND RECOVERY EQUIPMENT**

EXECUTIVE SUMMARY

This Navy Training System Plan (NTSP) has been developed to identify the life cycle manpower, personnel, and training requirements associated with Navy Shore-Based Aircraft Launch and Recovery Equipment (ALRE). The Shore-Based ALRE addressed in this NTSP includes the E-28 Emergency Runway Arresting Gear, Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System (FLOLS), Shore-Based Improved Fresnel Lens Optical Landing System (IFLOLS), Manually Operated Visual Landing Aid System (MOVLAS), Precision Approach Path Indicator (PAPI), and Glide Slope Indicator (GSI). All shore-based ALRE systems have achieved Initial Operating Capability. All shore-based ALRE with the exception of the IFLOLS are in the Operations and Support phase of the Defense Acquisition System (DAS). The IFLOLS is in the Production and Deployment phase of the DAS.

The E-28 Emergency Runway Arresting Gear is designed to safely arrest tail-hook equipped aircraft in the event of an aborted takeoff or emergency landing at an ashore airfield. The FLOLS, IFLOLS, MOVLAS, PAPI, and GSI are all Visual Landing Aids installed at airfields and Field Carrier Landing Practice sites. When these Visual Landing Aids are installed at Field Landing Practice sites they are primarily utilized as Aircraft Carrier Pilot training aids.

The FLOLS, IFLOLS, MOVLAS, and GSI are primarily operated by Landing Signal Officers (LSO) assigned to the squadron whose pilots are performing practice carrier landings. Operation of these systems may also be performed by military, civilian, or contractor personnel assigned to the base Operations Department, Airfield Maintenance and Ground Electronics Branches. The PAPI is completely automatic in operation and does not require an operator. The E-28 Emergency Runway Arresting Gear is automatic and does not require an operator unless an arrestment has occurred. Once an arrestment occurs, a crew of three operators is required to retract the Arresting Gear so the equipment is prepared for the next arrestment.

Initial, IFLOLS operator training will be presented at each site during installation by Carrier and Field Service Unit (CAFSU) personnel. Follow-on LSO operator training for FLOLS, MOVLAS, and GSI is established at the LSO School, Naval Air Station Oceana, Virginia. Follow-on operator training for IFLOLS became Ready For Training at the LSO School in April 2002.

Organizational and intermediate level maintenance of all shore-based ALRE addressed in this NTSP is performed by military, civilian, or contractor personnel assigned to the base Operations Department, Airfield Maintenance, and Ground Electronics Branches. Depot level maintenance of shore-based ALRE is performed at Naval Aviation Depots, contractor facilities, and Naval Air Warfare Center Aircraft Division Lakehurst, New Jersey.

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No specific Navy rating or Navy Enlisted Classification is required for shore-based ALRE maintenance. Follow-on E-28 Emergency Runway Arresting Gear, FLOLS, and MOVLAS maintenance training for Navy personnel is established at Naval Air Maintenance Training Unit (NAMTRAU) Norfolk, Virginia, and NAMTRAU North Island, California.

No follow-on maintenance training has been established or is planned for shore-based IFLOLS, PAPI, and GSI. The skill levels of military personnel assigned to shore activities supporting these systems should be adequate without additional training. If additional training is needed to support the maintenance of the IFLOLS, it is recommended that the personnel attend the shipboard IFLOLS training course.

At many shore activities, civilian or contractor personnel maintain the ALRE. In these cases, technical competency is a requirement of employment. No additional operator or maintenance billets have been identified specifically to support the ALRE addressed in this NTSP; therefore, this NTSP has no effect on Navy manning or end strength.

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LIST OF ACRONYMS

ABE	Aviation Boatswain's Mate (Equipment)
ACDU	Active Duty
ALRE	Aircraft Launch and Recovery Equipment
AOB	Average Onboard
ATIR	Annual Training Input Requirement
CFY	Current Fiscal Year
CIN	Course Identification Number
COMLANTFLT	Commander in Chief Atlantic Fleet
COMPACFLT	Commander in Chief Pacific Fleet
CM	Corrective Maintenance
CNATT	Center for Naval Aviation Technical Training
CNO	Chief of Naval Operations
CV	Aircraft Carrier
CVN	Aircraft Carrier Nuclear
FCLP	Field Carrier Landing Practice
FLOLS	Fresnel Lens Optical Landing System
FMS	Foreign Military Sales
FRS	Fleet Readiness Squadron
FY	Fiscal Year
GFE	Government Furnished Equipment
GSI	Glide Slope Indicator
HSI	Human Systems Integration
HUD	Head-Up Display
IFLOLS	Improved Fresnel Lens Optical Landing System
ILSP	Integrated Logistics Support Plan
IPB	Illustrated Parts Breakdown
LSO	Landing Signal Officer
MOVLAS	Manually Operated Visual Landing Aid System
MRC	Maintenance Requirements Card

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LIST OF ACRONYMS

MSD	Material Support Date
NA	Not Applicable
NALF	Navy Auxiliary Landing Field
NADEP	Naval Aviation Depot
NAF	Naval Air Facility
NAMTRAU	Naval Air Maintenance Training Unit
NAS	Naval Air Station
NATOPS	Naval Air Training and Operating Procedures Standardization
NATTC	Naval Air Technical Training Center
NAVAIR	Naval Air Systems Command
NAVICP	Navy Inventory Control Point
NAVPERSCOM	Navy Personnel Command
NAWCAD	Naval Air Warfare Center Aircraft Division
NAWCADLKE	Naval Air Warfare Center Aircraft Division Lakehurst
NEC	Navy Enlisted Classification
NETC	Naval Education and Training Command
NSD	Navy Support Date
NTSP	Navy Training System Plan
OJT	On-the-Job Training
OPEVAL	Operational Evaluation
OPN	Other Procurement, Navy
OPNAV	Office of the Chief of Naval Operations
OPNAVINST	Office of the Chief of Naval Operations Instruction
OPO	OPNAV Principal Official
PAPI	Precision Approach Path Indicator
PFY	Previous Fiscal Year
PM	Preventive Maintenance
PMA	Program Manager, Air
PQS	Personnel Qualification Standards
RFOU	Ready For Operational Use
RFT	Ready For Training

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LIST OF ACRONYMS

SELRES	Selected Reserve
TAR	Training and Administration of the Naval Reserve
TD	Training Device
TECHEVAL	Technical Evaluation
TTE	Technical Training Equipment
ULSS	Users Logistics Support Summary

**SHORE-BASED AIRCRAFT
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PREFACE

This Proposed Navy Training System Plan (NTSP) for the Shore-Based Aircraft Launch and Recovery Equipment (ALRE) updates the Draft NTSP, A-50-8509, dated October 2001. This document has been developed to comply with guidelines set forth in the Navy Training Requirements Documentation Manual, Office of the Chief of Naval Operations (OPNAV) Publication P-751-1-9-97.

This NTSP incorporates into one document all ALRE currently employed at Navy shore bases and carrier practice landing fields. This NTSP addresses only Navy shore-based ALRE. Marine Corps shore-based ALRE is addressed in the Expeditionary Airfields NTSP, A-50-0122/D, dated December 2001.

No review comments were received on the October 2001 Draft version of this NTSP.

PART I - TECHNICAL PROGRAM DATA

A. NOMENCLATURE-TITLE-PROGRAM

1. Nomenclature-Title-Acronym. Shore-Based Aircraft Launch and Recovery Equipment (ALRE)

2. Program Element. Since the ALRE addressed in this NTSP are all Other Procurement, Navy (OPN) funded programs, no program element numbers have been assigned.

B. SECURITY CLASSIFICATION

- 1. System Characteristics** Unclassified
- 2. Capabilities** Unclassified
- 3. Functions**..... Unclassified

C. MANPOWER, PERSONNEL, AND TRAINING PRINCIPALS

OPNAV Principal Official (OPO) Program Sponsor CNO (N78)

OPO Resource Sponsor..... CNO (N78)

Developing Agency NAVAIR (PMA251)

Training Agency COMLANTFLT
COMPACFLT
CNATT (FID N5)
COMNAVRESFOR

Training Support Agency..... NAVAIR (PMA205)

Manpower and Personnel Mission Sponsor..... CNO (N12)
NAVPERSCOM (PERS-4, PERS-404)

Director of Naval Education and Training CNO (N00T)

D. SYSTEM DESCRIPTION

1. Operational Uses. Shore-based ALRE consists of terminal guidance equipment and emergency arresting gear used at Navy shore installations.

a. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear is designed to safely arrest tail-hook equipped aircraft in the event of an aborted takeoff or emergency landing at an ashore airfield.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System (FLOLS) provides visual information needed to maintain the proper glideslope angle for aircraft on final approach. The Mark 8 FLOLS is used primarily as a aircraft carrier pilot training aid.

c. Shore-Based Improved Fresnel Lens Optical Landing System. The Shore-Based Improved Fresnel Lens Optical Landing System (IFLOLS) displays an optimal glide path and trend data to the Pilot of a fixed-wing aircraft on approach at up to one nautical mile. The shore-based IFLOLS is being installed at Field Carrier Landing Practice (FCLP) sites and will be primarily utilized as an aircraft carrier pilot training aid.

d. Manually Operated Visual Landing Aid System. The Manually Operated Visual Landing Aid System (MOVLAS) is an emergency signaling system intended to be used when the primary optical landing system is inoperative. The shore-based MOVLAS is installed at FCLP sites and is primarily utilized as an aircraft carrier pilot training aid.

e. Precision Approach Path Indicator. The Precision Approach Path Indicator (PAPI) System provides the pilot of an aircraft on landing approach with the visual clues necessary to obtain a proper glideslope. The shore-based PAPI is installed at FCLP sites and is primarily utilized as an aircraft carrier pilot training aid.

f. Glide Slope Indicator. The Mark 3 Mod 1 Glide Slope Indicator (GSI) is a shore-based aid for training pilots in the use of the shipboard Mark 1 Mod 0 Stabilized GSI.

2. Foreign Military Sales. Information concerning Foreign Military Sales (FMS) of shore-based ALRE may be obtained from Program Manager, Air (PMA) 251.

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST

1. Development Test

a. E-28 Emergency Runway Arresting Gear. Technical Evaluation (TECHEVAL) of the E-28 Emergency Runway Arresting Gear was successfully completed by NAVAIR at Naval Air Warfare Center Aircraft Division Lakehurst (NAWCADLKE), New Jersey, in the 1980s.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The FLOLS successfully completed TECHEVAL at NAWCADLKE in the 1970s.

c. Shore-Based Improved Fresnel Lens Optical Landing System. TECHEVAL for IFLOLS was successfully completed by NAVAIR at Naval Air Warfare Center Aircraft Division (NAWCAD) Patuxent River, Maryland, in September 1996.

d. Manually Operated Visual Landing Aid System. TECHEVAL for the MOVLAS was successfully completed over thirty years ago.

e. Precision Approach Path Indicator. The PAPI did not require TECHEVAL.

f. Glide Slope Indicator. TECHEVAL for the GSI was successfully completed in the 1980s.

2. Operational Test

a. E-28 Emergency Runway Arresting Gear. Operational Evaluation (OPEVAL) of the E-28 Emergency Runway Arresting Gear was successfully completed by NAVAIR at NAWCADLKE in the 1980s.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The FLOLS successfully completed OPEVAL at NAWCADLKE in the 1970s.

c. Shore-Based Improved Fresnel Lens Optical Landing System. Formal OPEVAL was not required for the IFLOLS.

d. Manually Operated Visual Landing Aid System. Formal OPEVAL was not required for the MOVLAS.

e. Precision Approach Path Indicator. Formal OPEVAL was not required for the PAPI.

f. Glide Slope Indicator. OPEVAL for the GSI was successfully completed in the 1980s.

F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED

1. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear replaced the E-5 Emergency Runway Arresting Gear.

2. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 FLOLS replaced the Mark 10 FLOLS.

3. Shore-Based Improved Fresnel Lens Optical Landing System. The Mark 13 Mod 0 IFLOLS replaced the Mark 6 Mod 3 FLOLS.

4. Manually Operated Visual Landing Aid System. The MOVLAS did not replace an existing system.

5. Precision Approach Path Indicator. The PAPI replaced the FLOLS at selected Navy activities.

6. Glide Slope Indicator. The GSI did not replace an existing system.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description

a. E-28 Emergency Runway Arresting Gear. An aircraft arrestment using the E-28 Emergency Runway Arresting Gear is accomplished by the engagement of the aircraft's tail-hook with a deck pendant that spans the runway. During run-out, the kinetic energy of the arrested aircraft is absorbed by the rotary hydrodynamic arresting engines. The arrestment is entirely automatic. The arresting gear engines are activated when the aircraft's tail-hook engages the deck pendant, thereby pulling out the attached purchase tapes. As each tape unwinds, the drum, through a splined shaft, turns a vaned rotor between vaned stators in a housing filled with fluid. The turbulent fluid resistance decreases the rotational speed of the drums, thereby slowing down the purchase tape payout that in turn applies a braking force on the aircraft.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 Portable shore-based FLOLS is a trailer-mounted electro-optical landing system used at permanent and expeditionary airfields. The FLOLS provides a horizontal bar of lights that appears in the cell assembly. The position of the bar of lights with respect to a set of fixed horizontal datum lights indicates to the pilot of an approaching aircraft whether the aircraft is above, below, or on the correct glide slope. The bar of light is formed by the combined actions of the source lights, Fresnel Lenses, and Lenticular Lenses. When the pilot aligns the bar of light with the horizon datum lights, the aircraft's approach is correct for a runway landing.

c. Shore-Based Improved Fresnel Lens Optical Landing System. The Shore-based IFLOLS is a trailer-mounted version of the IFLOLS Mark 13 Mod 0 shipboard system. The IFLOLS is towed to a concrete pad located adjacent to the runway, set-up and aligned, and put into operation. At the end of each exercise or at the end of each day the IFLOLS is removed and stored. The IFLOLS displays a virtual image ("meatball"), which appears aligned between two horizontal datum arms when the aircraft is on an optimal glide path for landing approach. As the aircraft traverses above or below the optimal glide path the ball will appear to move away from the datum axis respectively. The ball appears yellow in color unless the aircraft's landing approach is greater than 45 degrees below the optimal glide path axis, in which case a flashing red color will be observed.

d. Manually Operated Visual Landing Aid System. The MOVLAS is designed to present glide slope information to the pilot of an approaching aircraft in the same manner as the FLOLS or IFLOLS. When either the FLOLS or IFLOLS becomes inoperative, the trailer-mounted MOVLAS is towed into position and operates in place of the inoperative system until repairs are completed.

e. Precision Approach Path Indicator. The PAPI uses four individual units, each consisting of two lights permanently installed perpendicular to the runway, arranged in a

single bar configuration. Each unit projects a split beam of light, precisely divided horizontally into a white upper section and a red lower section. The transition from red to white or vice versa occurs over a vertical angle of approximately three degrees glide slope, with the light in this area being pink in color.

f. Glide Slope Indicator. The GSI, which is mounted on a tripod, provides a single bar of light. The color of the light indicates to the pilot of an approaching aircraft whether the aircraft is above, below, or on the correct glide slope. The GSI incorporates a wave-off light that when flashing indicates to the pilot that he should abort the landing attempt and initiate a new landing approach.

2. Physical Description

a. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear general arrangement consists of two arresting engine assemblies and two runway edge sheave assemblies installed on concrete foundations on opposite sides of the runway. Purchase tapes from each arresting engine assembly are coupled to a common deck pendant assembly. Major components include a tape drum and capstan assembly, a retrieve drive sprocket and bearing assembly, and a vaned rotor mounted on a common shaft assembled in a vaned housing. An engine absorber unit is mounted on a steel base on which are also mounted a retrieve engine, an arrestor sheave, and a tape pressure arm pivot. Leading E-28 Emergency Runway Arresting Gear particulars are as follows:

Arresting Engine

Gross Weight	11,700 pounds
Length	13 feet
Width.....	33 inches
Rewind System Power	Gasoline engine
Purchase Tape Data	Nylon, 8 inches wide, 0.344 inches thick
Deck Pendant Construction	1 ¼ inch diameter non-rotating wire rope
Run-out	1,000 feet

Torque Converter

Maximum input speed.....	3000 revolutions per minute
Maximum input torque	270 pounds per foot
Maximum torque multiplication ratio	3.42 to 1
Charging oil capacity	12 gallons per minute at 1800 revolutions per minute
Weight.....	250 pounds

Retrieve Engine

Number of cylinders	4
Bore and stroke	3 ¾ inches x 4 inches
Piston displacement	177 cubic inches
Electrical system	12 volt
Cooling.....	Air

Horsepower 56.7
Weight..... 530 pounds

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 FLOLS is mounted on a modified ¼-ton, two-wheel cargo trailer upon which a frame assembly, cell assembly, junction box, spare parts box, control box reel assembly, separate wave-off intensity control box, source light failure indicator, trailer jack assemblies, and sighting mirror assembly are mounted. Physical dimensions of major components are as follows:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Control Box	20.00	36.25	20.00	250
Junction Box	6.75	22.50	20.25	50
Source Light Failure Indicator	10.50	6.47	4.75	10
Wave-off Intensity Control	16.25	14.25	8.75	25
Jack and Level Assemblies	22.00	8.00	3.00	25
Frame Assembly	66.50	204.00	14.50	90
Cell Assemblies (five each)	10.00	22.75	32.50	50
Sighting Mirror Assembly	97.00	1.50 (diameter)		35

c. Shore-Based Improved Fresnel Lens Optical Landing System. Physical dimensions of major components are as follows:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Trailer	102.0	84.0	144.0	2333.0
Indicator Display Assembly	73.0	17.0	42.0	1350.0
Landing Signal Officer (LSO) Control Panel Assembly	18.5	13.0	24.5	70.0
Mounting Structure Assembly	65.0	51.0	51.8	800.0
Port Datum Arm Assembly	50.0	27.0	70.0	100.0
STBD Datum Arm Assembly	50.0	27.0	70.0	100.0
Distribution Junction Box	17.5	6.2	15.0	20.0

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Port Wave Off and Cut Lamp Arm Assembly	57.0	33.0	40.0	120.0
STBD Wave Off and Cut Lamp Arm Assembly	57.0	33.0	40.0	120.0
Lighting Junction Box Assembly	7.6	11.4	13.4	16.9

d. Manually Operated Visual Landing Aid System. The following table lists the MOVLAS major components' characteristics:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Light Box (A-100A)	60.5	12.0	5.50	46.0
LSO Controller (A-200)	61.0	6.3	16.80	25.0
* Power Control Box (A-300A)	23.0	16.0	8.00	96.0
Datum Light Boxes (A-400A, A-401A)	25.5	66.0	4.75	17.5
* Datum Control Box (A-500A)	23.0	16.0	8.00	75.0
Transformer (A-600A)	23.0	16.0	8.00	105.0
Dual Connector Box (A-1000)	23.0	16.0	8.00	42.0
Light Box Monitor (A-1100)	11.0	7.0	7.30	20.0
Junction Box (A-1200)	16.0	12.0	7.20	40.0

* Power required to operate the Power Control Box is 115 Volts, 60 Cycle (Type 1), Single Phase, 20 Amperes (maximum). Power required to operate the Datum Control Box is 115 Volts, 60 Cycle (Type 1), Single Phase, 25 Amperes (maximum).

e. Precision Approach Path Indicator. Physical dimensions of major components are as follows:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Base Assembly	7.75	17.38	29.380	50
Module Assembly	6.50	6.00	19.500	20
Tilt Switch Assembly	4.00	5.25	3.025	1

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Hood Assembly	8.50	14.19	32.060	5
Leg Cap Assembly	5.50	3.00	3.000	2
Power Adapter Assembly	20.00	20.00	11.500	75

f. Glide Slope Indicator. Physical dimensions of major components are as follows:

ASSEMBLY	DIMENSIONS (INCHES)			WEIGHT (POUNDS)
	HEIGHT	WIDTH	DEPTH	
Control Panel Assembly	15.00	13.6250	7.3125	25
Transformer Assembly	13.25	9.1875	6.3125	18
GSI Assembly	13.00	22.5000	26.000	60
Tripod Assembly	29.00	10.0000 (diameter)		34
Wave-off Light Bar Assembly	22.00	4.0000	30.000	13
Portable Switch Assembly	8.1875 (length)			5

3. New Development Introduction

a. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear was installed as new equipment.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The Mark 8 FLOLS was introduced as a retrofit replacement for the Mark 10 FLOLS.

c. Shore-Based Improved Fresnel Lens Optical Landing System. IFLOLS is being introduced as a replacement for existing shore-based FLOLS through new production.

d. Manually Operated Visual Landing Aid System. The MOVLAS was introduced as new equipment at selected shore bases.

e. Precision Approach Path Indicator. The PAPI was introduced as new equipment at selected Navy shore-based activities.

f. Glide Slope Indicator. The GSI was introduced as new equipment at FCLP locations.

4. Significant Interfaces. Not Applicable (NA)

5. New Features, Configurations, or Material. NA

H. CONCEPTS

1. Operational Concept

a. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear is automatically activated when an aircraft's tail-hook engages the deck pendant. No operator is required.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The FLOLS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings.

c. Shore-Based Improved Fresnel Lens Optical Landing System. The IFLOLS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings.

d. Manually Operated Visual Landing Aid System. The same civilian or Navy personnel responsible for airfield maintenance are responsible for setup of the MOVLAS and breakdown of the MOVLAS after use. Once set up, the MOVLAS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings.

e. Precision Approach Path Indicator. Once energized, the PAPI operates completely automatically. No operator is required.

f. Glide Slope Indicator. The GSI is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings.

2. Maintenance Concept

a. E-28 Emergency Runway Arresting Gear. All maintenance of the E-28 Emergency Runway Arresting Gear is performed at the organizational level. No intermediate or depot level repair is required.

(1) Organizational. Organizational level maintenance consists of both Preventive Maintenance (PM) and Corrective Maintenance (CM). Organizational level maintenance is performed by civilian or Navy personnel. No specific rating or Navy Enlisted Classification (NEC) is required.

(a) Preventive Maintenance. PM includes cleaning, inspection, lubrication, alignment, adjustments, and operational and functional testing of the arresting gear in accordance with specific requirements identified in the E-28 Emergency Runway Arresting Gear Maintenance Plan, SSIED MP No. 009-81.

(b) Corrective Maintenance. CM consists of operational and functional testing, fault isolation, and repair by assembly, subassembly, component, or piece-part replacement.

(2) Intermediate. NA

(3) Depot. No repair is performed at the depot level; however, the disassembly and assembly of the arresting gear on-site is considered a depot level procedure.

(4) Interim Maintenance. NA

(5) Life Cycle Maintenance Plan. The E-28 Emergency Runway Arresting Gear is replaced on a 15-year life cycle. It is more cost effective to replace the E-28 Emergency Runway Arresting Gear every 15 years than to establish an organic or commercial rework program. Activities where the equipment is exposed to adverse environmental conditions may employ a shorter replacement cycle.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. A remove and replace maintenance concept is applied to Mark 8 FLOLS. Fault isolation is accomplished through the use of built-in test equipment and common test equipment. Maintenance of the FLOLS is performed at three levels, organizational, intermediate, and depot.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM is conducted at specific intervals as prescribed by the applicable Maintenance Requirements Cards (MRC). PM actions include corrosion inspection, cleaning, lubricating, alignment, adjustment, pre-operational inspections, post-operational inspections, and functional testing.

(b) Corrective Maintenance. CM consists of fault isolation, replacement of failed modules, functional testing, corrosion treatment, and system calibration.

(2) Intermediate. Intermediate level maintenance is restricted to the periodic calibration of digital multi-meters used in the system.

(3) Depot. Depot maintenance consists of repair or complete restoration, manufacture of parts and assemblies, and functional testing of assemblies. Naval Aviation Depot (NADEP) North Island, California, is the designated depot level maintenance activity for FLOLS.

(4) Interim Maintenance. Interim maintenance support was provided by NAVAIR (NAWCADLKE) prior to the Navy Support Date (NSD) of May 1988.

(5) Life Cycle Maintenance Plan. NA

c. Shore-Based Improved Fresnel Lens Optical Landing System. A remove and replace maintenance concept is applied to the Shore-Based IFLOLS. Fault isolation is accomplished through the use of built-in test equipment and common test equipment. IFLOLS maintenance is performed at two levels, organizational and depot.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM is conducted at specific intervals as prescribed by the MRCs. PM actions include corrosion inspection, cleaning, lubricating, alignment, adjustment, pre-operational inspections, post-operational inspections, and functional testing.

(b) Corrective Maintenance. CM consists of fault isolation, replacement of failed modules, functional testing, corrosion treatment, and system calibration.

(2) Intermediate. NA

(3) Depot. Depot level is responsible for rework and overhaul of the IFLOLS repairable assemblies. CM actions include repair or complete restoration, manufacture of parts and assemblies, and functional testing. NADEP North Island is the designated depot level repair activity for IFLOLS.

(4) Interim Maintenance. NAVAIR (NAWCADLKE) will provide interim support for IFLOLS prior to the NSD scheduled for June 2003.

(5) Life Cycle Maintenance Plan. NA

d. Manually Operated Visual Landing Aid System. MOVLAS maintenance is conducted only at the organizational level, following the direction and guidance outlined in the Office of the Chief of Naval Operations Instruction (OPNAVINST) 4790.2G.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM is performed at specific intervals in accordance with procedures detailed in the MOVLAS Maintenance Plan, NAWCADLKE-M84096002. PM actions include cleaning, inspection, alignment, adjusting, and functional testing.

(b) Corrective Maintenance. CM includes functional testing, fault isolation to the failed component, removal, and repair or replacement.

(2) Intermediate. NA

(3) Depot. NA

(4) Interim Maintenance. Interim Maintenance is not required. The NSD for MOVLAS was reached in September 1969.

(5) Life Cycle Maintenance Plan. NA

e. Precision Approach Path Indicator. The PAPI is maintained at two levels, organizational and intermediate, under the Reliability Centered Maintenance concept prescribed by OPNAVINST 4790 series.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform PAPI organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM includes cleaning, inspection, lubrication, alignment, adjustment, and operational and functional testing of the arresting gear in accordance with specific requirements identified in the PAPI Maintenance Plan, NAWCADLKE-M85094002.

(b) Corrective Maintenance. CM consists of operational and functional testing, fault isolation, and repair by assembly, subassembly, component, or piece-part replacement.

(2) Intermediate. Intermediate maintenance of the PAPI consists of both PM and CM. PM tasks include those actions that require non-destructive testing and calibration. CM includes all other maintenance actions beyond the capability of organizational maintenance.

(3) Depot. NA

(4) Interim Maintenance. NA

(5) Life Cycle Maintenance Plan. Major components of the PAPI are replaced with new components when no longer economically serviceable.

f. Glide Slope Indicator. A remove and replace maintenance concept is applied to the GSI. GSI maintenance is performed at two levels, organizational and depot.

(1) Organizational. Organizational level maintenance consists of both PM and CM. The same civilian or Navy personnel responsible for airfield maintenance perform organizational maintenance. No specific rating or NEC is required.

(a) Preventive Maintenance. PM is conducted at specific intervals as prescribed by the MRCs. PM actions include corrosion inspection, cleaning, lubricating, alignment, adjustment, pre-operational inspections, post-operational inspections, and functional testing.

(b) Corrective Maintenance. CM consists of fault isolation, replacement of failed modules, functional testing, and corrosion treatment.

(2) Intermediate. NA

(3) Depot. Depot level is responsible for rework and overhaul of the GSI repairable assemblies. Corrective maintenance actions include repair or complete restoration, manufacture of parts and assemblies, and functional testing. Depot level maintenance is performed by NAVAIR (NAWCADLKE).

(4) Interim Maintenance. NA

(5) Life Cycle Maintenance Plan. NA

3. Manning Concept

a. E-28 Emergency Runway Arresting Gear. The E-28 Emergency Runway Arresting Gear requires no operator. There are no billets identified solely for the maintenance of the E-28 Emergency Runway Arresting Gear. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the E-28 Emergency Runway Arresting Gear.

b. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System. The FLOLS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings. There are no billets identified solely for the maintenance of the shore-based FLOLS. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the FLOLS.

c. Shore-Based Improved Fresnel Lens Optical Landing System. The IFLOLS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings. There are no billets identified solely for the maintenance of the Shore-Based IFLOLS. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the IFLOLS.

d. Manually Operated Visual Landing Aid System. The MOVLAS is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings. There are no billets identified solely for the maintenance of the shore-based MOVLAS. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the MOVLAS.

e. Precision Approach Path Indicator. The PAPI does not require an operator. There are no billets identified solely for the maintenance of the shore-based PAPI. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the PAPI.

f. Glide Slope Indicator. The GSI is operated by LSOs assigned to the squadron conducting practice aircraft carrier landings. There are no billets identified solely for the maintenance of the shore-based GSI. The same civilian or Navy personnel who maintain the airfield are tasked with the maintenance of the GSI.

4. Training Concept. All formal initial operator and maintenance training for the ALRE addressed in this NTSP has been completed. The Fleet Installation Team, during installation, will present informal operator and maintenance training for the IFLOLS at each site.

Follow-on operator training is established at the Navy LSO School, Oceana, Virginia, for the Mark 8 FLOLS, MOVLAS, and GSI. Follow-on operator training for the IFLOLS was added to the Navy LSO School curricula in April 2002.

A training system status report was completed in August 2002 on the Navy LSO school curricula outlined as follow-on training in this NTSP. The result of this report effected changes to the syllabi to make the training that was being delivered more effective. A formal training effectiveness evaluation has not been conducted. *C-670-2014 Shore-Based Arresting Gear and Optical Landing Aids* course has undergone a yearly formal course evaluation since its inception. The results from these formal course reviews are used to effect curriculum changes to meet the fleet's needs. A formal training effectiveness evaluation action chit has been documented in Part VI of this NTSP listing the Naval Air Warfare Center Lakehurst as the action command.

Follow-on maintenance training for the E-28 Emergency Runway Arresting Gear, Mark 8 FLOLS, and MOVLAS is established as a two-day course at Naval Air Maintenance Training Units (NAMTRAU) Norfolk, Virginia, and North Island, California. This course is usually taught on-site at the requesting activity. No follow-on maintenance training for shore-based IFLOLS, PAPI, or GSI has been established or is planned. At many shore activities civilian or contractor personnel maintain the ALRE. In these cases, technical competency is a requirement of employment.

Maintenance training for the IFLOLS, PAPI, and GSI is included in course *C-670-2010, Optical Landing System Maintenance*. This 68-day course is available at Naval Air Technical Training Center (NATTC) Detachment Lakehurst, New Jersey. Upon completion of the course, the student is awarded NEC 4745, Optical Landing System Technician. Personnel with NEC 4735 are only assigned to afloat maintenance billets and shore instructor billets. Therefore, since these technicians would not be maintaining shore-based ALRE, this course is not addressed this NTSP.

a. Initial Training. All initial training has been completed.

b. Follow-on Training

Title	Shore-Based Arresting Gear and Optical Landing Aids
CIN	C-670-2014
Model Manager ...	NAMTRAU North Island
Description	<p>This course provides training to the shore-based airfield maintenance technician, including:</p> <ul style="list-style-type: none">° Operation of the E-28 Arresting Gear° Maintenance and Lubrication of the E-28 Arresting Gear° Mark 8 Optical Landing System° MK 2 MOD 2 MOVLAS <p>Upon completion, the student will be able to maintain shore-based arresting gear and optical landing aids under supervision.</p>
Location	<ul style="list-style-type: none">° NAMTRAU Norfolk° NAMTRAU North Island
Length	2 days
RFT date	Currently available
Skill identifier	None
TTE/TD	None
Prerequisite	Aviation Boatswain's Mate (Equipment) (ABE) or other rating assigned to a shore airfield maintenance billet.

Title	Initial Formal Ground Training
CIN	D-2G-0001
Model Manager ...	Navy LSO School
Description	<p>This course provides training to the prospective Squadron LSO, including:</p> <ul style="list-style-type: none"> ° LSO Administrative and Operational Responsibilities Including Shore-Based and Shipboard Equipment ° Glideslope Geometry ° Aircraft Recovery Bulletins ° Aircraft Characteristics ° Waving Concepts and Techniques ° Field Carrier Landing Practice ° Fleet Automated Performance Assessment and Readiness Training Systems <p>Upon completion, the student will be able to perform the duties of a Squadron LSO without supervision.</p>
Delivery Method..	<p>Total hours of instruction by delivery method:</p> <p>15 hours of mediated interactive lessons</p> <p>13.5 hours of seminar</p> <p>10 hours of workshops</p> <p>8 hours of LSO Trainer</p> <p>7 hours of CBT</p> <p>Media: Blended</p> <p>Evaluation Strategies: Direct observation</p>
Location	Navy LSO School, Naval Air Station (NAS) Oceana
Length	10 days
RFT date	Currently available
Skill identifier	None
TTE/TD	Refer to element IV.A.1
Prerequisites	<ul style="list-style-type: none"> ° Designator 1310 ° Designation as LSO Trainee

Title	Advanced Formal Ground Training
CIN	D-2G-0002
Model Manager ...	Navy LSO School
Description	<p>This course provides training to the prospective Airwing or Staff LSO, including:</p> <ul style="list-style-type: none"> ° Administrative and Operational Responsibilities of an Airwing Staff LSO ° Platform Strategy ° Barricade ° Pitching Deck Recoveries ° LSO Training and Evaluation ° Fleet Automated Performance Assessment and Readiness Training System <p>Upon completion, the student will be able to perform the duties of a Wing or Staff LSO without supervision.</p>
Delivery Method..	<p>Total hours of instruction by delivery method:</p> <p>6.5 hours of mediated interactive lessons</p> <p>11.5 hours of seminar</p> <p>2 hours of workshops</p> <p>3 hours of LSO Trainer</p> <p>2 hours of CBT</p> <p>Media: Blended</p> <p>Evaluation Strategies: Direct observation</p>
Location	Navy LSO School, NAS Oceana
Length	3 days
RFT date	Currently available
Skill identifier	None
TTE/TD	Refer to element IV.A.1
Prerequisites	<ul style="list-style-type: none"> ° Designator 1310 ° D-2G-0001, Initial Formal Ground Training ° Wing LSO Designation

Title	Fleet Readiness Squadron Training Command
CIN	D-2G-0003
Model Manager ...	Navy LSO School
Description	<p>This course provides training to the prospective Fleet Readiness Squadron (FRS) and Training Command LSO, including:</p> <ul style="list-style-type: none"> ° Administrative and Operational Responsibilities of a Training LSO ° Teaching Waving Techniques and Considerations ° Conducting Ground Training and Field Carrier Landing Practice ° Initial Carrier Qualification Requirements ° FRS Automated Performance Assessment and Readiness Training System <p>Upon completion, the student will be able to perform the duties of an FRS or Training Command LSO without supervision.</p>
Delivery Method..	<p>Total hours of instruction by delivery method:</p> <p>3 hours of mediated interactive lessons</p> <p>10.5 hours of seminar</p> <p>1 hour of workshops</p> <p>2 hours of LSO Trainer</p> <p>1 hour of CBT</p> <p>Media: Blended</p> <p>Evaluation Strategies: Direct observation</p>
Location	Navy LSO School, NAS Oceana
Length	3 days
RFT date	Currently available
Skill identifier	None
TTE/TD	Refer to element IV.A.1
Prerequisites	<ul style="list-style-type: none"> ° Designator 1310 ° D-2G-0002, Initial Formal Ground Training ° Squadron LSO Designation

c. Student Profiles

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
1310	◦ Pilot assigned to an LSO billet.
ABE	◦ C-604-2012, Aviation Boatswain's Mate Launch and Recovery Equipment Class A1

d. Training Pipelines. NA

I. ONBOARD (IN-SERVICE) TRAINING

1. Proficiency or Other Training Organic to the New Development

a. Maintenance Training Improvement Program. NA

b. Aviation Maintenance Training Continuum System. NA

2. Personnel Qualification Standards. With the exception of systems that employ a Fresnel Lens, no Personnel Qualifications Standards (PQS) have been developed for shore-based ALRE.

PQS TITLE	NUMBER	MODEL MANAGER
Fresnel Lens	NAVEDTRA 43225-6B	COMNAVAIRPAC
Fresnel Lens	NAVEDTRA 43225-6B/SA	COMNAVAIRPAC

3. Other Onboard or In-Service Training Packages. On-The-Job Training (OJT) is used at shore bases to improve the technical competence of personnel assigned to the Operations Department, Airfield Maintenance Division, and Ground Electronics Branch. This OJT is applicable to military, civil service, and contractor personnel engaged in airfield and visual landing aids maintenance.

J. LOGISTICS SUPPORT

1. E-28 Emergency Runway Arresting Gear

a. Manufacturer and Contract Numbers. The manufacturer and contract numbers are not available.

b. Program Documentation. The E-28 Emergency Runway Arresting Gear Maintenance Plan, SSIED MP No. 009-81, was approved in May 1982. No Integrated Logistics Support Plan (ILSP) will be developed for the E-28 Emergency Runway Arresting Gear.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with Illustrated Parts Breakdown (IPB) and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. No special tools, test sets, or test equipment is required to support the E-28 Emergency Runway Arresting Gear.

e. Repair Parts. The Naval Inventory Control Point (NAVICP), Philadelphia, Pennsylvania, manages repair parts for the E-28 Emergency Runway Arresting Gear. Requests for parts are processed through normal supply channels.

f. Human Systems Integration. Although the various disciplines of Human Systems Integration have been applied to varying degrees to the development of the systems addressed in this NTSP, no Human Systems Integration Plan has been developed for E-28 Emergency Runway Arresting Gear. All new design systems and software will address the human-machine interface for operators, maintainers, and support personnel. The design processes conformed to best standard human engineering practices as defined in existing human factors engineering design standards.

All future ICW and CBT must be Sharable Content Object Reference Model (SCORM) conformant as per Executive Order 13111 guidance, and conform with the technical standards to run in the intended environment: classroom automated electronic classroom or learning resource center, Navy e-learning, AMTCS, or desktop (NMCI ashore or IT21 afloat).

The ECP process, in accordance with NAVAIRINST 4130.1C, is utilized to initiate upgrades to operational and training systems and allows for inputs to the affect on the human and MPT. All new engineering change proposals for E-28 Emergency Runway Arresting Gear take into consideration the human-machine interface for Operators, Maintainers and Support Personnel.

This system has no habitability impact. Manpower issues are covered in part II and III of this document.

Environmental and Occupational Safety and Health requirements meet federal, state, and local standards, regulations, and directives and are enforced by respective agencies, as applicable

2. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System

a. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
Information not available	S. W. Electronics and Manufacturing Corporation	619 Hollywood Avenue Cherry Hill, NJ 08002

b. Program Documentation. No ILSP was developed for FLOLS; however, an updated Operational Logistics Support Plan, NAEC 51-8044, dated December 1987, has been prepared and is available.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. All special tools required to support the FLOLS have been procured and distributed.

e. Repair Parts. Repair parts for the FLOLS are managed by the NAVICP, Philadelphia. Requests for parts are processed through normal supply channels. The Material Support Date (MSD) for the FLOLS was in the 1980s.

f. Human Systems Integration. Although the various disciplines of Human Systems Integration have been applied to varying degrees to the development of the systems addressed in this NTSP, no Human Systems Integration Plan has been developed for FLOLS. All new design systems and software will address the human-machine interface for operators, maintainers, and support personnel. The design processes conformed to best standard human engineering practices as defined in existing human factors engineering design standards.

All future ICW and CBT must be Sharable Content Object Reference Model (SCORM) conformant as per Executive Order 13111 guidance, and conform with the technical standards to run in the intended environment: classroom automated electronic classroom or learning resource center, Navy e-learning, AMTCS, or desktop (NMCI ashore or IT21 afloat).

The ECP process, in accordance with NAVAIRINST 4130.1C, is utilized to initiate upgrades to operational and training systems and allows for inputs to the affect on the human and MPT. All new engineering change proposals for FLOLS take into consideration the human-machine interface for Operators, Maintainers and Support Personnel.

This system has no habitability impact. Manpower issues are covered in part II and III of this document.

Environmental and Occupational Safety and Health requirements meet federal, state, and local standards, regulations, and directives and are enforced by respective agencies, as applicable

3. Shore-Based Improved Fresnel Lens Optical Landing System

a. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N00019-96-D-0159	Raytheon Technical Services Company	12160 Sunrise Valley Drive Suite 500 Reston, VA 20191

b. Program Documentation. A Users Logistics Support Summary (ULSS), NAWCADLKE-U82093001, is being developed by NAWCADLKE. The Draft ULSS is dated March 2001. The IFLOLS Maintenance Plan, NAWCADLKE M82093001, was approved in May 1997.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. No special tools, test sets, or test equipment is required to support the IFLOLS.

e. Repair Parts. Prior to the MSD, scheduled for June 2002, repair parts will be provided by the contractor. After the MSD, repair parts for the IFLOLS will be managed by the NAVICP, Philadelphia. Requests for parts will be processed through normal supply channels.

f. Human Systems Integration. Human Systems Integration (HSI) Plan, NAWCADLKE-MISC-05-SR-0117, dated September 1993, addresses all HSI issues applicable to the IFLOLS.

All new design systems and software will address the human-machine interface for operators, maintainers, and support personnel. The design processes conformed to best standard human engineering practices as defined in existing human factors engineering design standards.

All future ICW and CBT must be Sharable Content Object Reference Model (SCORM) conformant as per Executive Order 13111 guidance, and conform with the technical standards to run in the intended environment: classroom automated electronic classroom or learning resource center, Navy e-learning, AMTCS, or desktop (NMCI ashore or IT21 afloat).

The ECP process, in accordance with NAVAIRINST 4130.1C, is utilized to initiate upgrades to operational and training systems and allows for inputs to the affect on the human and MPT. All new engineering change proposals for IFLOLS take into consideration the human-machine interface for Operators, Maintainers and Support Personnel.

This system has no habitability impact. Manpower issues are covered in part II and III of this document.

Environmental and Occupational Safety and Health requirements meet federal, state, and local standards, regulations, and directives and are enforced by respective agencies, as applicable.

4. Manually Operated Visual Landing Aid System

a. Manufacturer and Contract Numbers. The manufacturer and contract numbers are not available.

b. Program Documentation. The updated MOVLAS Maintenance Plan, NAWCADLKE-M85094002, was approved in April 1996. No ILSP will be developed for MOVLAS.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. No special tools, test sets, or test equipment is required to support the MOVLAS.

e. Repair Parts. Repair parts for the MOVLAS are managed by NAVICP, Philadelphia. Requests for parts are processed through normal supply channels.

f. Human Systems Integration. Although the various disciplines of Human Systems Integration have been applied to varying degrees to the development of the systems addressed in this NTSP, no Human Systems Integration Plan has been developed for MOVLAS. All new design systems and software will address the human-machine interface for operators, maintainers, and support personnel. The design processes conformed to best standard human engineering practices as defined in existing human factors engineering design standards.

All future ICW and CBT must be Sharable Content Object Reference Model (SCORM) conformant as per Executive Order 13111 guidance, and conform with the technical standards to run in the intended environment: classroom automated electronic classroom or learning resource center, Navy e-learning, AMTCS, or desktop (NMCI ashore or IT21 afloat).

The ECP process, in accordance with NAVAIRINST 4130.1C, is utilized to initiate upgrades to operational and training systems and allows for inputs to the affect on the human and

MPT. All new engineering change proposals for Shore Based Launch and Recovery Equipment take into consideration the human-machine interface for Operators, Maintainers and Support Personnel.

This system has no habitability impact. Manpower issues are covered in part II and III of this document.

Environmental and Occupational Safety and Health requirements meet federal, state, and local standards, regulations, and directives and are enforced by respective agencies, as applicable.

5. Precision Approach Path Indicator

a. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N68335-95-C-0049	Multi Electric Manufacturing, Inc.	4223-43 West Lake Street Chicago, IL 60624

b. Program Documentation. The PAPI Maintenance Plan, NAWCADLKE-M85094002, was approved in May 1996. The PAPI ULSS, NAWCADLKE-U85094002, was approved in September 1997.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. Two special tools are required to support the PAPI. The special tools are a PAPI Aiming Device and a PAPI Optical Gauge. Both of these tools are included with each PAPI System.

e. Repair Parts. Repair parts for PAPI are managed by the NAVICP, Philadelphia. Requests for parts are processed through normal supply channels.

f. Human Systems Integration. Although the various disciplines of Human Systems Integration have been applied to varying degrees to the development of the systems addressed in this NTSP, no Human Systems Integration Plan has been developed for PAPI. All new design systems and software will address the human-machine interface for operators, maintainers, and support personnel. The design processes conformed to best standard human engineering practices as defined in existing human factors engineering design standards.

All future ICW and CBT must be Sharable Content Object Reference Model (SCORM) conformant as per Executive Order 13111 guidance, and conform with the technical standards to run in the intended environment: classroom automated electronic classroom or learning resource center, Navy e-learning, AMTCS, or desktop (NMCI ashore or IT21 afloat).

The ECP process, in accordance with NAVAIRINST 4130.1C, is utilized to initiate upgrades to operational and training systems and allows for inputs to the affect on the human and MPT. All new engineering change proposals for Shore Based Launch and Recovery Equipment take into consideration the human-machine interface for Operators, Maintainers and Support Personnel.

This system has no habitability impact. Manpower issues are covered in part II and III of this document.

Environmental and Occupational Safety and Health requirements meet federal, state, and local standards, regulations, and directives and are enforced by respective agencies, as applicable.

6. Glide Slope Indicator

a. Manufacturer and Contract Numbers. The Glide Slope Indicator was manufactured by NAWCADLKE. Contract numbers not available.

b. Program Documentation. The GSI Maintenance Plan, SSIED MP No. 006-86, was approved in August 1986. No other program documentation or other logistics plans were developed for the shore-based GSI program.

c. Technical Data Plan. All required technical manuals including the Installation, Service, Operation, and Maintenance Instructions with IPB and MRCs have been approved, published, and distributed.

d. Test Sets, Tools, and Test Equipment. No special tools or equipment is required to support the GSI.

e. Repair Parts. Repair parts for the GSI are managed by NAVICP, Philadelphia. Requests for parts are processed through normal supply channels.

f. Human Systems Integration. Although the various disciplines of Human Systems Integration have been applied to varying degrees to the development of the systems addressed in this NTSP, no Human Systems Integration Plan has been developed for GSI. All new design systems and software will address the human-machine interface for operators, maintainers, and support personnel. The design processes conformed to best standard human engineering practices as defined in existing human factors engineering design standards.

All future ICW and CBT must be Sharable Content Object Reference Model (SCORM) conformant as per Executive Order 13111 guidance, and conform with the technical standards to

run in the intended environment: classroom automated electronic classroom or learning resource center, Navy e-learning, AMTCS, or desktop (NMCI ashore or IT21 afloat).

The ECP process, in accordance with NAVAIRINST 4130.1C, is utilized to initiate upgrades to operational and training systems and allows for inputs to the affect on the human and MPT. All new engineering change proposals for Shore Based Launch and Recovery Equipment take into consideration the human-machine interface for Operators, Maintainers and Support Personnel.

This system has no habitability impact. Manpower issues are covered in part II and III of this document.

Environmental and Occupational Safety and Health requirements meet federal, state, and local standards, regulations, and directives and are enforced by respective agencies, as applicable.

K. SCHEDULES

1. E-28 Emergency Runway Arresting Gear

a. Installation and Delivery Schedules. All E-28 Emergency Runway Arresting Gear has been delivered and installed.

b. Ready For Operational Use Schedule. The E-28 Emergency Runway Arresting Gear is Ready For Operational Use (RFOU) upon completion of installation and certification.

c. Time Required to Install at Operational Sites. The E-28 Emergency Runway Arresting Gear requires approximately 90 days to install.

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule. No Training Devices (TD) are required to support E-28 Emergency Runway Arresting Gear training. All Technical Training Equipment (TTE) required to support E-28 Emergency Runway Arresting Gear training has been delivered and is identified in element IV.A.1 of this NTSP.

2. Mark 8 Portable Shore-Based Fresnel Lens Optical Landing System

a. Installation and Delivery Schedules. Delivery of the FLOLS has been completed.

b. Ready For Operational Use Schedule. FLOLS is RFOU upon receipt.

c. Time Required to Install at Operational Sites. NA

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule.

No TDs are required to support FLOLS training. All TTE required to support FLOLS training has been delivered and is identified in element IV.A.1 of this NTSP.

3. Shore-Based Improved Fresnel Lens Optical Landing System

a. Installation and Delivery Schedule. Scheduled installation completion dates, as provided by NAWCADLKE, for the IFLOLS are as follows:

NALF Whitehouse, Florida	August 1999 (Completed)
NAF El Centro, California.....	March 2001 (Completed)
NALF Fentress, Virginia	May 2001 (Completed)
NAS Whidbey Island, Washington.....	November 21, 2001 (Completed)
NAS Kingsville, Texas	June 7, 2002 (Completed)
NAF Meridian, Mississippi.....	June 7, 2002 (Completed)
NALF San Clemente Island, California.....	September 27, 2002 (Completed)
NAS Key West, Florida	September 27, 2002 (Completed)
NALF Orange Grove, Texas.....	October 2, 2002 (Completed)
NAF Atsugi, Japan.....	October 30, 2002 (Completed)
NAS Lemoore, California.....	December 19, 2002 (Completed)
NAF Atsugi (Iwo Jima), Japan	March 28, 2003 (Completed)
NAS Norfolk, Virginia.....	April 2, 2003 (Completed)
NALF Joe Williams Field, Meridian, Mississippi...	May 6, 2003 (Completed)
NS Ventura County, California	May 30, 2003 (Completed)
NAS Oceana, Virginia	June 5, 2003 (Completed)
NALF Coupeville, Washington	May 28, 2004
NAS Jacksonville, Florida	July 30, 2004

b. Ready For Operational Use Schedule. The IFLOLS is RFOU upon completion of installation. Installation includes operational inspection and certification.

c. Time Required to Install at Operational Sites. The IFLOLS requires 31 days to install.

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule.

There are no plans to install an IFLOLS at the LSO School at this time.

4. Manually Operated Visual Landing Aid System

a. Installation and Delivery Schedules. Delivery of the MOVLAS was completed in the 1970s.

b. Ready For Operational Use Schedule. The MOVLAS is RFOU upon receipt.

c. Time Required to Install at Operational Sites. NA

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule.

No TDs are required to support MOVLAS training. All TTE required to support MOVLAS training has been delivered and is identified in element IV.A.1 of this NTSP.

5. Precision Approach Path Indicator

a. Installation and Delivery Schedules. All PAPI Systems have been delivered and installed.

b. Ready For Operational Use Schedule. The PAPI is RFOU upon completion of installation, testing, and certification.

c. Time Required to Install at Operational Sites. The PAPI required five weeks to install at each site. This included construction of the reinforced concrete pad.

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule.

NA

6. Glide Slope Indicator

a. Installation and Delivery Schedules. The delivery and installation of the GSI was completed in the 1980s.

b. Ready For Operational Use Schedule. NA

c. Time Required to Install at Operational Sites. The GSI requires two days.

d. Foreign Military Sales and Other Source Delivery Schedule. NA

e. Training Device and Technical Training Equipment Delivery Schedule.

NA

L. GOVERNMENT-FURNISHED EQUIPMENT AND CONTRACTOR-FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Maintenance Plan for the Precision Approach Path Indicator	NAWCADLKE-M85094002	NAWCADLKE	Approved May 96
User's Logistics Support Summary for the Precision Approach Path Indicator	NAWCADLKE-U85094002	NAWCADLKE	Approved Sep 97
Maintenance Plan for the Manually Operated Visual Landing Aid System	NAWCADLKE-M84096002	NAWCADLKE	Approved Apr 96
Maintenance Plan for the E-28 Emergency Runway Arresting Gear	SSIED MP NO. 009-81	NAWCADLKE	Approved May 82
Human Systems Integration Plan for the Improved Fresnel Lens Optical Landing System	NAWCADLKE-MISC-05-SR-0117	NAWCADLKE	Approved Sep 93
Operational Logistics Support Plan for the Fresnel Lens Optical Landing System	NAEC 51-8044	NAWCADLKE	Approved Dec 87
User's Logistics Support Summary for the Improved Fresnel Lens Optical Landing System	NAWCADLKE-U82093001	NAWCADLKE	Approved Aug 01
Maintenance Plan for the Glide Slope Indicator	SSIED MP NO. 006-86	NAWCADLKE	Approved Aug 86
Maintenance Plan for the Improved Fresnel Lens Optical Landing System	NAWCADLKE-M82093001	NAWCADLKE	Approved May 97

PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by the Shore-Based Aircraft Launch and Recovery Equipment and, therefore, are not included in Part II of this NTSP:

II.A. Billet Requirements

II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule

II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities

II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities

REQUIREMENTS

II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: Total Force Manpower Management System

DATE: 25 September 2002

ACTIVITY, UIC		PFYs	CFY02	FY03	FY04	FY05	FY06
OPERATIONAL ACTIVITIES - NAVY							
CVW 1	09732	1	0	0	0	0	0
CVW 17	09745	1	0	0	0	0	0
CVW 3	09731	1	0	0	0	0	0
CVW 7	09736	1	0	0	0	0	0
CVW 8	09748	1	0	0	0	0	0
CVWR 20	09393	1	0	0	0	0	0
VAW 120	09527	1	0	0	0	0	0
VAW 121	09467	1	0	0	0	0	0
VAW 123	09477	1	0	0	0	0	0
VAW 124	09526	1	0	0	0	0	0
VAW 125	09922	1	0	0	0	0	0
VAW 126	09963	1	0	0	0	0	0
VAW 78	09102	1	0	0	0	0	0
VF 101	09067	1	0	0	0	0	0
VFA 105	65183	1	0	0	0	0	0
VFA 106	09679	1	0	0	0	0	0
VFA 131	63934	1	0	0	0	0	0
VFA 136	55141	1	0	0	0	0	0
VFA 15	09015	1	0	0	0	0	0
VFA 203	09030	1	0	0	0	0	0
VFA 204	09032	1	0	0	0	0	0
VFA 34	09070	1	0	0	0	0	0
VFA 37	09478	1	0	0	0	0	0
VFA 81	09221	1	0	0	0	0	0
VFA 82	09122	1	0	0	0	0	0
VFA 83	09223	1	0	0	0	0	0
VFA 86	09943	1	0	0	0	0	0
VFA 87	63922	1	0	0	0	0	0
VS 22	09287	1	0	0	0	0	0
VS 24	09629	1	0	0	0	0	0
VS 30	09226	1	0	0	0	0	0
VS 31	09573	1	0	0	0	0	0
VS 32	09353	1	0	0	0	0	0
CVW 11	09734	1	0	0	0	0	0
CVW 2	09742	1	0	0	0	0	0
CVW 5	09733	1	0	0	0	0	0
CVW 9	09738	1	0	0	0	0	0
VAQ 129	09995	1	0	0	0	0	0
VAW 112	09458	1	0	0	0	0	0
VAW 113	09459	1	0	0	0	0	0

II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: Total Force Manpower Management System

DATE:09/01/2001

ACTIVITY, UIC		PFYs	CFY02	FY03	FY04	FY05	FY06
VAW 115	09463	1	0	0	0	0	0
VAW 116	09465	1	0	0	0	0	0
VAW 117	09985	1	0	0	0	0	0
VFA 113	09092	1	0	0	0	0	0
VFA 115	09604	1	0	0	0	0	0
VFA 122	09355	1	0	0	0	0	0
VFA 125	09485	1	0	0	0	0	0
VFA 137	55142	1	0	0	0	0	0
VFA 146	09063	1	0	0	0	0	0
VFA 147	63925	1	0	0	0	0	0
VFA 151	09558	1	0	0	0	0	0
VFA 192	09076	1	0	0	0	0	0
VFA 195	09706	1	0	0	0	0	0
VFA 201	09309	1	0	0	0	0	0
VFA 22	09561	1	0	0	0	0	0
VFA 25	09637	1	0	0	0	0	0
VFA 27	65185	1	0	0	0	0	0
VFA 94	09295	1	0	0	0	0	0
VFA 97	63923	1	0	0	0	0	0
VS 21	09739	1	0	0	0	0	0
VS 29	09204	1	0	0	0	0	0
VS 33	09263	1	0	0	0	0	0
VS 35	09345	1	0	0	0	0	0
VS 38	09192	1	0	0	0	0	0
VS 41	09298	1	0	0	0	0	0
TOTAL:		70	0	0	0	0	0
FLEET SUPPORT ACTIVITIES - NAVY							
Landing Signal Officer School	68788	1	0	0	0	0	0
VT 4	0395A	1	0	0	0	0	0
VT 7	0398A	1	0	0	0	0	0
COMNAVAIRPAC	57025	1	0	0	0	0	0
VT 21	0400A	1	0	0	0	0	0
VT 22	0401A	1	0	0	0	0	0
TOTAL:		8	0	0	0	0	0

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
OPERATIONAL ACTIVITIES - NAVY					
CVW 1, 09732					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 17, 09745					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 3, 09731					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 7, 09736					
ACDU	1	0	1312		
ACTIVITY TOTAL:	1	0			
CVW 8, 09748					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVWR 20, 09393					
SELRES	2	0	1312		
ACTIVITY TOTAL:	2	0			
VAW 120, 09527					
ACDU	5	0	1312		
ACTIVITY TOTAL:	5	0			
VAW 121, 09467					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 123, 09477					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
VAW 124, 09526					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 125, 09922					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 126, 09963					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 78, 09102					
SELRES	2	0	1311		
ACTIVITY TOTAL:	2	0			
VF 101, 09067					
ACDU	7	0	1312		
	0	25			
ACTIVITY TOTAL:	7	25			
VFA 105, 65183					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 106, 09679					
ACDU	6	0	1312		
ACTIVITY TOTAL:	6	0			
VFA 131, 63934					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 136, 55141					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
VFA 15, 09015					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 203, 09030					
SELRES	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 204, 09032					
SELRES	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 34, 09070					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 37, 09478					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 81, 09221					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 82, 09122					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 83, 09223					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 86, 09943					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
VFA 87, 63922					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VS 22, 09287					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VS 24, 09629					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VS 30, 09226					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VS 31, 09573					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VS 32, 09353					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
CVW 11, 09734					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 2, 09742					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
CVW 5, 09733					
ACDU	3	0	1312		
ACTIVITY TOTAL:	3	0			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
CVW 9, 09738					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
VAQ 129, 09995					
ACDU	4	0	1312		
ACTIVITY TOTAL:	4	0			
VAW 112, 09458					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 113, 09459					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 115, 09463					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 116, 09465					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VAW 117, 09985					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
VFA 113, 09092					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 115, 09604					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 122, 09355					
ACDU	6	0	1312		
ACTIVITY TOTAL:	6	0			
VFA 125, 09485					
ACDU	5	0	1312		
ACTIVITY TOTAL:	5	0			
VFA 137, 55142					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 146, 09063					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 147, 63925					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 151, 09558					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 192, 09076					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
VFA 195, 09706					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 201, 09309					
SELRES	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 22, 09561					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 25, 09637					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 27, 65185					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 94, 09295					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VFA 97, 63923					
ACDU	2	0	1311		
ACTIVITY TOTAL:	2	0			
VS 21, 09739					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VS 29, 09204					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
VS 33, 09263					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VS 35, 09345					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VS 38, 09192					
ACDU	1	0	1311		
ACTIVITY TOTAL:	1	0			
VS 41, 09298					
ACDU	6	0	1312		
ACTIVITY TOTAL:	6	0			
FLEET SUPPORT ACTIVITIES - NAVY					
Landing Signal Officer School, 68788					
ACDU	3	0	1312		
ACTIVITY TOTAL:	3	0			
VT 4, 0395A					
ACDU	3	0	1312		
SELRES	2	0	1312		
ACTIVITY TOTAL:	5	0			
VT 7, 0398A					
ACDU	4	0	1312		
ACTIVITY TOTAL:	4	0			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS		DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
	OFF	ENL			
VT 9, 09177					
ACDU	2	0	1312		
ACTIVITY TOTAL:	2	0			
COMNAVAIRPAC, 57025					
ACDU	1	0	1312		
ACTIVITY TOTAL:	1	0			
VT 21, 0400A					
ACDU	4	0	1312		
SELRES	1	0	1312		
ACTIVITY TOTAL:	5	0			
VT 22, 0401A					
ACDU	4	0	1312		
ACTIVITY TOTAL:	4	0			

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG/ RATING	PNEC/SNEC PMOS/SMOS	PFYs		CFY02		FY03		FY04		FY05		FY06	
		OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
NAVY OPERATIONAL ACTIVITIES - ACDU													
1311		75		0		0		0		0		0	
1312		53		0		0		0		0		0	
			50		0		0		0		0		0
NAVY OPERATIONAL ACTIVITIES - SELRES													
1311		8		0		0		0		0		0	
NAVY FLEET SUPPORT ACTIVITIES - ACDU													
1312		21		0		0		0		0		0	
NAVY FLEET SUPPORT ACTIVITIES - SELRES													
1312		3		0		0		0		0		0	
SUMMARY TOTALS:													
NAVY OPERATIONAL ACTIVITIES - ACDU													
		128	50	0	0	0	0	0	0	0	0	0	0
NAVY OPERATIONAL ACTIVITIES - SELRES													
		8		0		0		0		0		0	
NAVY FLEET SUPPORT ACTIVITIES - ACDU													
		21		0		0		0		0		0	
NAVY FLEET SUPPORT ACTIVITIES - SELRES													
		3		0		0		0		0		0	
GRAND TOTALS:													
NAVY - ACDU													
		149	50	0	0	0	0	0	0	0	0	0	0
NAVY - SELRES													
		11		0		0		0		0		0	

II.A.3. TRAINING ACTIVITIES INSTRUCTOR AND SUPPORT BILLET REQUIREMENTS

DESIG RATING	PNEC/SNEC PMOS/SMOS	PFYs		CFY02		FY03		FY04		FY05		FY06	
		OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL

TRAINING ACTIVITY, LOCATION, UIC: Landing Signal Officer School, NAS Oceana, 68788

INSTRUCTOR BILLETS

ACDU													
1312		3	0	3	0	3	0	3	0	3	0	3	0
TOTAL:		3	0	3	0	3	0	3	0	3	0	3	0

TRAINING ACTIVITY, LOCATION, UIC: NAMTRAU Norfolk, 44680

INSTRUCTOR BILLETS

ACDU													
ABE1		0	1	0	1	0	1	0	1	0	1	0	1
TOTAL:		0	1	0	1	0	1	0	1	0	1	0	1

TRAINING ACTIVITY, LOCATION, UIC: NAMTRAU North Island, 39476

INSTRUCTOR BILLETS

ACDU													
ABE1		0	1	0	1	0	1	0	1	0	1	0	1
TOTAL:		0	1	0	1	0	1	0	1	0	1	0	1

II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS

ACTIVITY, LOCATION, UIC	USN/ USMC	PFYs		CFY02		FY03		FY04		FY05		FY06	
		OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL
Landing Signal Officer School, NAS Oceana, 68788	NAVY	0.0		0.0		0.0		0.0		0.0		0.0	
NAMTRAU Norfolk, 44680	NAVY		0.1		0.1		0.1		0.1		0.1		0.1
NAMTRAU North Island, 39476	NAVY		0.1		0.1		0.1		0.1		0.1		0.1
SUMMARY TOTALS:													
	NAVY	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2
GRAND TOTALS:													
		0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS	BILLET BASE	CFY02 +/- CUM	FY03 +/- CUM	FY04 +/- CUM	FY05 +/- CUM	FY06 +/- CUM
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a. OFFICER - USN

Operational Billets ACDU and TAR

1311			75	0	75	0	75	0	75	0	75
1312			53	0	53	0	53	0	53	0	53

Fleet Support Billets ACDU and TAR

1312			21	0	21	0	21	0	21	0	21
------	--	--	----	---	----	---	----	---	----	---	----

Staff Billets ACDU and TAR

1312			3	0	3	0	3	0	3	0	3
------	--	--	---	---	---	---	---	---	---	---	---

SELRES Billets

1311			8	0	8	0	8	0	8	0	8
1312			3	0	3	0	3	0	3	0	3

TOTAL USN OFFICER BILLETS:

Operational			149	0	149	0	149	0	149	0	149
Fleet Support			21	0	21	0	21	0	21	0	21
Staff			3	0	3	0	3	0	3	0	3
SELRES			11	0	11	0	11	0	11	0	11

b. ENLISTED - USN

Operational Billets ACDU and TAR

			50	0	50	0	50	0	50	0	50
--	--	--	----	---	----	---	----	---	----	---	----

Staff Billets ACDU and TAR

ABE1			2	0	2	0	2	0	2	0	2
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Chargeable Student Billets ACDU and TAR

			0	0	0	0	0	0	0	0	0
--	--	--	---	---	---	---	---	---	---	---	---

TOTAL USN ENLISTED BILLETS:

Operational			50	0	50	0	50	0	50	0	50
Staff			2	0	2	0	2	0	2	0	2
Chargeable Student			0	0	0	0	0	0	0	0	0

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS	BILLET BASE	CFY02 +/- CUM	FY03 +/- CUM	FY04 +/- CUM	FY05 +/- CUM	FY06 +/- CUM
------------------	---------------	---------------	----------------	------------------	-----------------	-----------------	-----------------	-----------------

c. OFFICER - USMC Not Applicable

d. ENLISTED - USMC Not Applicable

II.B. PERSONNEL REQUIREMENTS

II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

COURSE LENGTH: 0.4 Weeks

NAVY TOUR LENGTH: 36 Months

ATTRITION FACTOR: Navy: 0%

BACKOUT FACTOR: 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY02 OFF ENL	FY03 OFF ENL	FY04 OFF ENL	FY05 OFF ENL	FY06 OFF ENL
NAMTRAU Norfolk	NAVY	ACDU		17	17	17	17
NAMTRAU North Island	NAVY	ACDU		17	17	17	17
		TOTAL:		34	34	34	34

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training

COURSE LENGTH: 1.6 Weeks

NAVY TOUR LENGTH: 36 Months

ATTRITION FACTOR: Navy: 0%

BACKOUT FACTOR: 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY02 OFF ENL	FY03 OFF ENL	FY04 OFF ENL	FY05 OFF ENL	FY06 OFF ENL
Landing Signal Officer School, NAS Oceana	NAVY	ACDU	29	29	29	29	29
		SELRES	1	1	1	1	1
		TOTAL:	30	30	30	30	30

CIN, COURSE TITLE: D-2G-0002, Advanced Formal Ground Training

COURSE LENGTH: 0.6 Weeks

NAVY TOUR LENGTH: 36 Months

ATTRITION FACTOR: Navy: 0%

BACKOUT FACTOR: 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY02 OFF ENL	FY03 OFF ENL	FY04 OFF ENL	FY05 OFF ENL	FY06 OFF ENL
Landing Signal Officer School, NAS Oceana	NAVY	ACDU	14	14	14	14	14
		SELRES	0	0	0	0	0
		TOTAL:	14	14	14	14	14

CIN, COURSE TITLE: D-2G-0003, Fleet Readiness Squadron Training Command

COURSE LENGTH: 0.6 Weeks

NAVY TOUR LENGTH: 36 Months

ATTRITION FACTOR: Navy: 0%

BACKOUT FACTOR: 0.00

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	CFY02 OFF ENL	FY03 OFF ENL	FY04 OFF ENL	FY05 OFF ENL	FY06 OFF ENL
Landing Signal Officer School, NAS Oceana	NAVY	ACDU	11	11	11	11	11
		SELRES	1	0	1	0	1
		TOTAL:	12	11	12	11	12

PART III - TRAINING REQUIREMENTS

The following elements are not affected by the Shore-Based Aircraft Launch and Recovery Equipment and, therefore, are not included in Part III of this NTSP:

III.A.1. Initial Training Requirements

III.A.2. Follow-on Training

III.A.2.b. Planned Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phased Out

III.A.2. FOLLOW-ON TRAINING

III.A.2.a. EXISTING COURSES

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids
TRAINING ACTIVITY: NAMTRAU Norfolk
LOCATION, UIC: NAS Norfolk, 44680

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	17		17		17		17		17	ATIR
	17		17		17		17		17	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

TRAINING ACTIVITY: NAMTRAU North Island
LOCATION, UIC: NAS North Island , 39476

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	17		17		17		17		17	ATIR
	17		17		17		17		17	Output
	0.1		0.1		0.1		0.1		0.1	AOB
	0.1		0.1		0.1		0.1		0.1	Chargeable

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC: NAS Oceana, 68788

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
29		29		29		29		29		ATIR
29		29		29		29		29		Output
0.8		0.8		0.8		0.8		0.8		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

SOURCE: NAVY **STUDENT CATEGORY:** SELRES

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
1		1		1		1		1		ATIR
1		1		1		1		1		Output
0.0		0.0		0.0		0.0		0.0		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

III.A.2.a. EXISTING COURSES

CIN, COURSE TITLE: D-2G-0002, Advanced Formal Ground Training
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC: NAS Oceana, 68788

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
14		14		14		14		14		ATIR
14		14		14		14		14		Output
0.1		0.1		0.1		0.1		0.1		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

SOURCE: NAVY **STUDENT CATEGORY:** SELRES

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
0		0		0		0		0		ATIR
0		0		0		0		0		Output
0.0		0.0		0.0		0.0		0.0		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

CIN, COURSE TITLE: D-2G-0003, Fleet Readiness Squadron Training Command
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC: NAS Oceana, 68788

SOURCE: NAVY **STUDENT CATEGORY:** ACDU - TAR

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
11		11		11		11		11		ATIR
11		11		11		11		11		Output
0.1		0.1		0.1		0.1		0.1		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

SOURCE: NAVY **STUDENT CATEGORY:** SELRES

CFY02		FY03		FY04		FY05		FY06		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
1		0		1		0		1		ATIR
1		0		1		0		1		Output
0.0		0.0		0.0		0.0		0.0		AOB
0.0		0.0		0.0		0.0		0.0		Chargeable

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the Shore-Based Aircraft Launch and Recovery Equipment and, therefore, are not included in Part IV of this NTSP:

IV.A. Training Hardware

IV.A.2. Training Devices

IV.B Courseware Requirements

IV.B.1. Training Services

IV.C. Facility Requirements

IV.C.1. Facility Requirements Summary (Space/Support) by Activity

IV.C.2. Facility Requirements Detailed by Activity and Course

IV.C.3. Facility Project Summary by Program

IV.A. TRAINING HARDWARE

IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU Norfolk

LOCATION, UIC: NAS Norfolk, 44680

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
----------	---	----------	-----------	---------	--------

TTE

006	Manually Operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
-----	---	---	--------	-----	---------

008	E-28 Arresting Gear	1	Jan 00	GFE	Onboard
-----	---------------------	---	--------	-----	---------

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU North Island

LOCATION, UIC: NAS North Island, 39476

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
----------	---	----------	-----------	---------	--------

TTE

006	Manually Operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
-----	---	---	--------	-----	---------

008	E-28 Arresting Gear	1	Jan 00	GFE	Onboard
-----	---------------------	---	--------	-----	---------

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
----------	---	----------	-----------	---------	--------

TTE

001	LSO Heads-Up Display (HUD) Console	1	Jan 00	GFE	Onboard
-----	------------------------------------	---	--------	-----	---------

002	CV Configured LSO Workstation	1	Jan 00	GFE	Onboard
-----	-------------------------------	---	--------	-----	---------

005	Long Range Line-up System	1	Mar 01	GFE	Onboard
-----	---------------------------	---	--------	-----	---------

006	Manually Operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
-----	---	---	--------	-----	---------

007	Precision Approach Path Indicator	1	Jan 00	GFE	Onboard
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IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE**CIN, COURSE TITLE:** D-2G-0002, Advanced Formal Ground Training**TRAINING ACTIVITY:** Landing Signal Officer School**LOCATION, UIC:** NAS Oceana, 68788

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
TTE					
001	LSO HUD Console	1	Jan 00	GFE	Onboard
002	CV Configured LSO Workstation	1	Jan 00	GFE	Onboard
005	Long Range Line-up System	1	Mar 01	GFE	Onboard
006	Manually Operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
007	Precision Approach Path Indicator	1	Jan 00	GFE	Onboard

CIN, COURSE TITLE: D-2G-0003, Fleet Readiness Squadron Training Command**TRAINING ACTIVITY:** Landing Signal Officer School**LOCATION, UIC:** NAS Oceana, 68788

ITEM NO.	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
TTE					
001	LSO HUD Console	1	Jan 00	GFE	Onboard
002	CV Configured LSO Workstation	1	Jan 00	GFE	Onboard
005	Long Range Line-up System	1	Mar 01	GFE	Onboard
006	Manually Operated Visual Landing Aid System	1	Jan 00	GFE	Onboard
007	Precision Approach Path Indicator	1	Jan 00	GFE	Onboard

IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU Norfolk

LOCATION, UIC: NAS Norfolk, 44680

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Curriculum Outline	10	Sep 97	Onboard
Instructor Guide	1	Sep 97	Onboard
Lesson Guide	10	Sep 97	Onboard
Overhead Projector	1	Sep 97	Onboard
Videotape, E-28 Shore Based Arresting Gear Operation	1	Sep 97	Onboard

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU North Island

LOCATION, UIC: NAS North Island, 39476

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Curriculum Outline	10	Sep 97	Onboard
Instructor Guide	1	Sep 97	Onboard
Lesson Guide	10	Sep 97	Onboard
Overhead Projector	1	Sep 97	Onboard
Videotape, E-28 Shore Based Arresting Gear Operation	1	Sep 97	Onboard

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Curriculum Outline	10	Jan 00	Onboard
Instructor Guide	2	Jan 00	Onboard
Lesson Guide	5	Jan 00	Onboard
Overhead Projector	1	Jan 00	Onboard
Student Evaluations	5	Jan 00	Onboard
Transparencies	2 sets	Jan 00	Onboard

CIN, COURSE TITLE: D-2G-0002, Advanced Formal Ground Training

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Curriculum Outline	10	Jan 00	Onboard
Instructor Guide	2	Jan 00	Onboard
Lesson Guide	5	Jan 00	Onboard
Overhead Projector	1	Jan 00	Onboard
Student Evaluations	5	Jan 00	Onboard
Transparencies	2 sets	Jan 00	Onboard

IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS

CIN, COURSE TITLE: D-2G-0003, Fleet Readiness Squadron Training Command

TRAINING ACTIVITY: Landing Signal Officer School

LOCATION, UIC: NAS Oceana, 68788

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Curriculum Outline	10	Jan 00	Onboard
Instructor Guide	2	Jan 00	Onboard
Lesson Guide	5	Jan 00	Onboard
Overhead Projector	1	Jan 00	Onboard
Student Evaluations	5	Jan 00	Onboard
Transparencies	2 sets	Jan 00	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU Norfolk

LOCATION, UIC: NAS Norfolk, 44680

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation, and Maintenance Instruction with IPB	Hard copy	10	Sep 97	Onboard
NAVAIR 51-40ABA-14 Portable Shore Based Fresnel Lens Optical Landing System Mk 8 Mod O	Hard copy	10	Sep 97	Onboard
NAVAIR 51-40ABA-15 Portable Shore Based Fresnel Lens Optical Landing System Mk 8 Mod 1	Hard copy	10	Sep 97	Onboard
NAVAIR 51-5-31 E-28 Emergency Runway Arresting Gear Parts A, B, and C	Hard copy	10	Sep 97	Onboard

CIN, COURSE TITLE: C-670-2014, Shore Based Arresting Gear and Optical Landing Aids

TRAINING ACTIVITY: NAMTRAU North Island

LOCATION, UIC: NAS North Island, 39476

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation and Maintenance Instruction with IPB	Hard copy	10	Sep 97	Onboard
NAVAIR 51-40ABA-14 Portable Shore Based Fresnel Lens Optical Landing System Mk 8 Mod O	Hard copy	10	Sep 97	Onboard
NAVAIR 51-40ABA-15 Portable Shore Based Fresnel Lens Optical Landing System Mk 8 Mod 1	Hard copy	10	Sep 97	Onboard
NAVAIR 51-5-31 E-28 Emergency Runway Arresting Gear Parts A, B, and C	Hard copy	10	Sep 97	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: D-2G-0001, Initial Formal Ground Training
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC: NAS Oceana, 68788

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 00-801-104 LSO NATOPS	Hard copy	5	Jan 00	Onboard
NAVAIR 00-801-105 Aircraft Carrier NATOPS Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation and Maintenance Instruction with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-10 Fresnel Lens Optical Landing System MK-6 MOD 3 Installation, Service, Operation and Maintenance Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-21 Improved Fresnel Lens Optical Landing System Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40BA-11 Illustrated Parts Breakdown for the MK-6 MOD 3 Fresnel Lens Optical Landing System	Hard copy	5	Jan 00	Onboard
NAVAIR 51-50ABA-2 Visual Landing Aids on Aircraft Carriers	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9 MK1 MOD 0 LSO HUD Maintenance and Overhaul Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9.1 MK-1 MOD 0 Console System IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-ABA-6 Long Range Line-UP Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
OPNAVINST 3710.7P General NATOPS	Hard copy	5	Jan 00	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: D-2G-0002, Advanced Formal Ground Training
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC: NAS Oceana, 68788

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 00-801-104 LSO NATOPS	Hard copy	5	Jan 00	Onboard
NAVAIR 00-801-105 Aircraft Carrier NATOPS Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation, and Maintenance Instruction with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-10 Fresnel Lens Optical Landing System MK-6 MOD 3 Installation, Service, Operation, and Maintenance Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-21 Improved Fresnel Lens Optical Landing System Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40BA-11 Illustrated Parts Breakdown for the MK-6 MOD 3 Fresnel Lens Optical Landing System	Hard copy	5	Jan 00	Onboard
NAVAIR 51-50ABA-2 Visual Landing Aids on Aircraft Carriers	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9 MK1 MOD 0 LSO HUD Maintenance and Overhaul Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9.1 MK-1 MOD 0 Console System IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-ABA-6 Long Range Line-Up Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
OPNAVINST 3710.7P General NATOPS	Hard copy	5	Jan 00	Onboard

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: D-2G-0003, Fleet Readiness Squadron Training Command
TRAINING ACTIVITY: Landing Signal Officer School
LOCATION, UIC: NAS Oceana, 68788

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 00-801-104 LSO NATOPS	Hard copy	5	Jan 00	Onboard
NAVAIR 00-801-105 Aircraft Carrier NATOPS Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40-ACA-2 Manually Operated Visual Landing Aid System Installation, Operation, and Maintenance Instruction with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-10 Fresnel Lens Optical Landing System MK-6 MOD 3 Installation, Service, Operation, and Maintenance Manual	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40ABA-21 Improved Fresnel Lens Optical Landing System Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-40BA-11 Illustrated Parts Breakdown for the MK-6 MOD 3 Fresnel Lens Optical Landing System	Hard copy	5	Jan 00	Onboard
NAVAIR 51-50ABA-2 Visual Landing Aids on Aircraft Carriers	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9 MK1 MOD 0 LSO HUD Maintenance and Overhaul Manual with IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-60-9.1 MK-1 MOD 0 Console System IPB	Hard copy	5	Jan 00	Onboard
NAVAIR 51-ABA-6 Long Range Line-UP Operation and Maintenance Manual with IPB	Hard copy	5	Jan 00	Onboard
OPNAVINST 3710.7P General NATOPS	Hard copy	5	Jan 00	Onboard

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
PDA	Achieved NSD for MOVLAS	Sep 69	Completed
PDA	Conducted OPEVAL and TECHEVAL of E-28 Emergency Runway Arresting Gear	1980s	Completed
PDA	Conducted OPEVAL and TECHEVAL of GSI	1980s	Completed
PDA	Conducted OPEVAL and TECHEVAL of Mark 8 FLOLS	1980s	Completed
PDA	Achieved NSD for Mark 8 FLOLS	May 88	Completed
PDA	Conducted TECHEVAL of IFLOLS	Sep 96	Completed
PDA	Achieved IOC for IFLOLS	Apr 01	Completed
PDA	Conducted ALRE Integrated Logistics Support Management Team Meeting	Apr 01	Completed
TSA	Developed Shore-Based ALRE NTSP	Jul 01	Completed
TSA	Distributed Updated Draft Shore-Based ALRE NTSP	Oct 01	Completed
TSA	Begin Teaching IFLOLS at LSO School	Apr 02	Completed
TSA	Develop Proposed NTSP and forward to OPNAV for Approval	Oct 02	Completed
ICP	Achieve Organic Material Support for IFLOLS	Oct 04	Pending
PDA	Achieve NSD for IFLOLS	Nov 04	Pending
PDA	Complete Installation of Shore-Based IFLOLS	Jul 04	Pending



PART VI - DECISION ITEMS / ACTION REQUIRED

DECISION ITEM OR ACTION REQUIRED	COMMAND ACTION	DUE DATE	STATUS
Training Effectiveness Evaluation	NAWC Lakehurst	Sept 04	Pending



PART VII - POINTS OF CONTACT

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